

Elements of the Universe as a source for designing two and three Dimensional fantasy women's fabrics printing in accordance with Egypt's Vision 2030

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Abstract:

Background: With the progress made by man and the recent discoveries in all fields, and with the great countries racing to launch satellites and orbital stations, what the sky now reveals through telescopes and space observatories every day and every hour draws attention to other worlds, so the universe was a wide target for study. Hence, "James Webb" Space Telescope has found great importance in this scope because of its advantages, as it surpasses other telescopes in terms of accuracy, efficiency, and speed in transmitting what is going on outside the framework of our planet, which attracted the attention of researchers and academics. As the design is one of human culture and creative activity involves the designer's sense and interaction with the aspects of life around him. Therefore, photos of the universe elements from "James Webb" came as a visual, aesthetic stimulus and a source for women's textile designs, which are characterized by strangeness, fantasy, unrealism, and known as fantasy. Webb is a visually and aesthetically exciting resource of non-realistic, and fantasy-inspired women's textile designs. So the research importance came from being a new experimental entry in the field of textile printing design and a different trend from what is prevalent in the field of designing women's fabrics in particular as innovation, digitization and future foresight in all fields related to human activity are one of its tributaries, therefore, the use of specialized computer programs in the field of designing flat prints for two- and three-dimensional fantasy fabrics for women and the application of three-dimensional printing machines with capabilities that determine the shape of the clothing product, its texture and color in record time and with great accuracy, so the three-dimensional output is in the form of a cloth fabric that carries artistic qualities aesthetic, stretchable, foldable and shape-changing.

Problem: The second millennium is characterized by a high technological revolution in all scientific and research fields. It was not limited to what is happening in our planet, but the matter went beyond to the universe through modern observatories with high-resolution technologies, this research tended to experiment with new trends and modern applications in keeping with Egypt 2030 Vision, and from the foregoing, the research problem was determined in answering the following two questions: 1- How can the elements of the universe, which were captured with high accuracy by "James Webb" Space Telescope, be used as a creative system in the design experiments for printing two- and three-dimensional fantasy fabrics for women? 2- What is the possibility of benefiting from specialized computer programs to obtain non-traditional, innovative design solutions with an aesthetic and functional dimension?

Objectives: 1- An attempt to benefit from recent discoveries through "James Webb" Space Telescope snapshots of the elements of the universe. 2- Introducing new experimental approaches to develop printing designs for women's fantasy fabrics that are characterized by fluency and modernity.

Significance: 1- Shedding light on the recent cosmic discoveries through the James Webb Space Telescope and linking them to the field of textile printing design. 2- A new experimental approach in the field of designing textile printing in general and designing women's fabrics in particular by presenting design ideas for those interested in designing fantasy fabrics for women with a distinct plastic character. 3- Presenting a creative vision through the use of some specialized computer programs and applying them in the field of designing for two- and three-dimensional women's fantasy fabrics.

Delimitations: Divided into objective boundaries by studying the universe elements as a source for designing 2D and 3D fantasy prints for women, and taking advantage of images taken using "James Webb" Space Telescope, time boundaries through images captured by "James Webb" Space Telescope since December 2022 and keeping pace with Egypt 2030 vision, and spatial boundaries including what was taken photos of outer space, and application in Egypt.

Methodology: The research followed descriptive analytical approach in describing and analyzing some elements of the universe that were accurately captured by "James Webb" Space Telescope, as well as design

ideas for printing women's fantasy fabrics.

Hypotheses: 1- There is a positive relationship between the use of the elements of the universe, captured by "James Webb" Space Telescope, and the enrichment of printing design for women fantasy fabrics. 2- Multiplicity of creativity sources in textile printing design, is possible to take advantage of modern cosmic discoveries to create two & three-dimensional designs for women fantasy fabrics.

Results: 1- There is a positively significant relationship between the use of the elements of the universe, which were captured by "James Webb" Space Telescope, and the enrichment of the design of printing fantasy fabrics for women. 2- The design experiments which consisted of 10 designs, 10 two-dimensional models and 10 three-dimensional models, are consistent with the research objectives and have an aesthetic and functional dimension.

Recommendations: 1- The need to encourage researchers to conduct more research and academic studies that deal with universe elements as a new approach in design field in general and textile printing design in particular. 2- Emphasizing the need to use modern digital technology in design and application areas to produce generation of designers qualified to use high-tech means. 3- Communicating with specialized fashion houses that are familiar with all that is new in the field of two- and three-dimensional fantasy fashion to link academic studies with practical reality.

Keywords :

Universe - Fantasy women's fabrics - Two and three-dimensional printing

References :

- 1- Ismail Shawky (2000). Design, Its Elements and Foundations in Plastic Art, Cairo, Zahraa Al-Sharq.
- 2- Ismail Shawky (1998). Art and Design, publisher is the author.
- 3- Ashraf Latif Tadros (2018). Space is the Unknown World, the National Institute for Astronomical and Geographical Research Press.
- 4- John Gribbin (2005). Star Dust, translated by Ezzat Amer, Supreme Council for Culture, first edition, Cairo.
- 5- Jehan Mohamed El-Gamal (2016). 3D printed fabrics for women's clothing, International Design Journal, Scientific Society of Designers, Volume 6, July issue.
- 6- Dina Ahmed Nafady (2006). The Philosophy of Abstraction in Modern Art, The Arab Foundation for Printing, Publishing and Training, Cairo.
- 7- Rehab Ragab Mahmoud (2014). The Art of Fashion Design, Scientific Studies and Artistic Visions, Dar Al Uloom for Publishing and Distribution, Cairo.
- 8- Rehab Omran (2020). Picasso's Ceramics as a Source for Designing Fantastic Ceramic Ornaments, published research, Journal of Architecture, Arts and Humanities, special issue.
- 9- Sherif Mohamed Abdullah (2013). Astronomy for Everyone, A journey into the depths of the universe, Dar Al-Fikr Al-Arabi, Cairo.
- 10- Ali Abdul Hakim Al-Balawli (2015). 3D Printing, first edition.
- 11- Kamal El-Din Hussein (2002). The Art of Writing Fantasy and Science Fiction, The Egyptian Lebanese House.
- 12- Muhammad Al-Arabi Al-Khattabi (2009). Reflections on the Universe, Man and Civilization" Academy of the Kingdom of Morocco, No. 26.
- 13- Muhammad Mahmoud Mustafa (2006). Astronomical Geography, the Community Library for Publishing and Distribution, first edition, Jordan.
- 14- Nahed Baba (2019). Arabic Calligraphy and the Universe for Contemporary Textile Designs Using Computer Aided Design, Journal of Architecture, Arts and Humanities, Vol. 4 No. 14.
- 15- Dee Reynolds (1995). Symbolist Aesthetics and Early Abstract Art, Cambridge university, Great Britain, 1995.
- 16- Elisabetta Kuky Druid (2015). Fashion details 4000 drawings, Promo press.
- 17- Kim Y-S, Lee J-A, Kim J-H, Jun Y-S. (2015). Formative characteristics of 3D printing fashion from the perspective of mechanic aesthetic. Res J Costume Culture.
- 18- Lucile Clerc (2015). Flip Fashion Designer, Gmaforlaurerrekking
- 19- N. Shahrubudina T.C, Leea R.Ramlana (2019). An Overview on 3D Printing Technology: Technological, Materials, and Applications.
- 20- Opes LR, Silva AF, Carneiro OS. (2018). multi-material 3D printing, the relevance of 7- materials affinity on the boundary interface performance, Addit Manuf, p.23-50.
- 21- Samit Chakraborty, Manik Chandra Biswas (2020). 3D printing technology of polymer fiber composites in textile and fashion industry, A potential roadmap of concept to consumer, Composite Structures, Textile

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22- <http://alfrijane.blogspot.com/p/httpmawdoo3comd983d985d8b9d8afd8afd983d.html>

23- <https://alkaoun.com/s>

24- <https://english.elpais.com/science-tech/2022-09-19/james-webb-telescope-rediscovered-earendel>

25- <https://english.elpais.com/science-tech/2022-09-19/james-webb-telescope-rediscovered-earendel>

26- <https://interestingengineering.com/science/co>

27- <https://interestingengineering.com/science/comparing-jupiters-images>

28- https://jedu.journals.ekb.eg/article_174374_6975d96f0798ad20816bf597764c3d94.pdf

29- https://jedu.journals.ekb.eg/issue_27160_27360.html

30- https://journals.ekb.eg/article_139088_f60e66583143a32f9b5f105188c122ca.pdf

31- <https://nasainarabic.net/education/articles/vicomet>

32- <https://platform.almanhal.com/>

33- <https://solarsystem.nasa.gov/about-black-holes-questions-you-might-have/>

34- <https://webbtelescope.org/webb-science/the-observatory/infrared-astronomy>

35- <https://www.almaany.com/ar/dict/ar>

36- <https://www.astronomycenter.net/articles/2013/11/17/183>

37- <https://www.bbc.com/arabic/science-and-tech>

38- <https://www.ekb.eg/ar/home>

39- <https://www.faa-design.com/>

40- <https://www.ibelieveinsci.com/%D8%A7%D9%84%D9%81%D8%B1%D9%82>

41- <https://www.nasa.gov/image-feature/solar>

42- <https://www.nasa.gov/sites/default/files/>

43- <https://www.presidency.eg/ar/%D9%85%D8%B5%D8%B1/%D8%B1%D8%A4%D9%8A%D8%A9-6D9%85%D8%B5%D8%B1-2030/>

44- <https://www.skyatnightmagazine.com/space-missions/james-webb-space-telescope>

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